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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,013	08/08/2001	Thomas Ullein	ULLEIN	3599

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EXAMINER

JOHNSON, VICKY A

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,013

Applicant(s)

ULLEIN ET AL.

Examiner

Vicky A. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24, 27-30, 32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-15, 17-22, 27-30, 32 and 33 is/are rejected.
- 7) ☒ Claim(s) 5, 16, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6-15, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Stief et al (US 5,931,754).

Stief et al disclose a chain tensioner, comprising: a tensioner piston (2) bearing upon a chain; a cylinder (3) guiding the piston for movement in a direction of the chain and bounding with the piston a pressure chamber (8) for receiving hydraulic fluid; a leakage gap for migration of hydraulic fluid from the pressure chamber (see Fig 3, the gap formed between the chambers 8 and 9, and a gap 14), and a control member (7) for at least reducing the leakage gap in size when a pressure in the pressure chamber increases (col. 4 lines 7-10, during extension of the piston 2 the pressure in chamber 8 decreases and the ball opens from its seat so that fluid flows through the gap between chambers 8 and 9 and the gap 14, during retraction of the piston 2 the pressure in chamber 8 increases to dampen the effects of the chain, and the ball of the valve closes the gap between the chambers 8 and 9 allowing fluid to only flow through the gap 14).

Re claim 2, Stief et al show the control member is a valve (7) having a valve body (unnumbered ball, see Fig 3) for bounding the leakage gap (see Fig 3), said valve

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body being configured for displacement to at least reduce the leakage gap in size, when the pressure in the pressure chamber increases (col. 4 lines 7-17).

Re claim 3, Stief et al show the valve body clears the leakage gap, when the pressure in the pressure chamber drops below a critical lower level, and at least reduces the leakage gap in size, when the pressure in the pressure chamber exceeds a critical upper level (col. 4 lines 7-12).

Re claim 4, Stief et al show a first stop (the retainer acts as a first stop to limit movement of the ball), wherein the valve body clears the leakage gap, when abutting against the first stop (see Fig 3).

Re claim 6, Stief et al show a valve spring (unnumbered valve spring, see Fig 3) for biasing the valve body against the first stop.

Re claim 7, Stief et al show a second stop (the top of element 1 closest to the ball), wherein the valve body is configured to abut the second stop (see Fig 3) when the pressure in the pressure chamber increases to thereby at least reduce the leakage gap in size (col. 4 lines 7-10).

Re claim 8, Stief et al show the second stop (the top of element 1 closest to the ball) forms a valve seat (see Fig 3) for the valve body (unnumbered ball, see Fig 3).

Re claim 9, Stief et al show the valve body (unnumbered ball, see Fig 3) is moved away from the first stop (unnumbered retainer) in opposition to a spring action applied by the valve spring (unnumbered spring, see Fig 3), as the pressure in the pressure chamber increases.

Re claim 10, Stief et al show the control member is a valve (7) in communication with the pressure chamber (8).

Re claim 11, Stief et al show the leakage gap is subdivided in a first leakage gap portion (a gap 14) and a second leakage gap portion (see Fig 3, the gap formed between the chambers 8 and 9) wherein the control member clears the first leakage gap portion when the pressure in the pressure chamber drops below a critical lower level, and at least reduces the second leakage gap portion in size, when the pressure in the pressure chamber exceeds a critical upper level (col. 4 lines 7-10).

Re claim 12, Stief et al show the control member is a valve (7) having a valve body (unnumbered ball, see Fig 3), which closes the second leakage gap portion when the pressure in the pressure chamber increases (col. 4 lines 7-17).

Re claim 13, Stief et al show a first stop (unnumbered retainer, see Fig 3), wherein the valve body abuts against the first stop to clear the second leakage gap portion when the pressure in the pressure chamber drops below the critical lower level.

Re claim 14, Stief et al show a second stop (unnumbered valve seat, see Fig 3), wherein the valve body abuts against the second stop to at least reduce the second leakage gap portion in size when the pressure in the pressure chamber exceeds the critical upper level (col. 4 lines 7-10).

Re claim 15, Stief et al show a valve spring (unnumbered valve spring, see Fig 3) for biasing the valve body against the first stop.

Re claim 17, Stief et al show the second stop is formed as valve seat (the top of element 1 closest to the ball) for the valve body (see Fig 3).

Re claim 18, Stief et al show a second stop (the top of element 1 closest to the ball), wherein the valve body abuts against the second stop to at least reduce the second leakage gap in size when the pressure in the pressure chamber exceeds the critical upper level (col. 4 lines 7-10), wherein the valve body (7) is disposed between the first and second stops (see Fig 3).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19-22, 27-30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stief et al (US 5,931,754) in view of Smith (US 6,361,458).

Stief et al discloses a tensioner as described above but does not disclose the valve body configured as a plunger.

Smith shows the valve body is configured as a plunger (304), which is guided in the cylinder for longitudinal displacement (see Fig 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the tensioner of Stief et al to include the valve body configured as a plunger as taught by Smith in order to reduce mass and increase response time (col. 5 lines 20-30).

Re claim 20, Smith shows the plunger defines the leakage gap in concert with the cylinder (see Fig 2).

Re claim 21, Stief et al show a valve spring (unnumbered valve spring, see Fig 3) for biasing the valve body in a direction toward a first stop (unnumbered retainer, see Fig 3), said piston clearing the leakage gap, when abutting against the first stop (see Fig 3) and Smith shows and renders obvious the valve body being a plunger (see Fig 3).

Re claim 22, Stief et al show the valve body is moved away from the first stop to abut against a second stop when the pressure in the pressure chamber exceeds the upper critical level to close the leakage gap (col. 4 lines 7-10) and Smith shows and renders obvious the valve body being a plunger (see Fig 3).

Re claim 27, Smith shows a seat formed with circumferential grooves to define the passageways (see Fig 7).

Re claim 28, Stief et al show a tensioner piston (2) bearing upon a chain; a cylinder (3) guiding the piston for movement in a direction of the chain and bounding with the piston a pressure chamber (8) for receiving hydraulic fluid; a leakage gap for migration of hydraulic fluid from the pressure chamber (see Fig 3, the gap formed between the chambers 8 and 9, and a gap 14), and a control member (7) for at least reducing the leakage gap in size when a pressure in the pressure chamber increases (col. 4 lines 7-10, during extension of the piston 2 the pressure in chamber 8 decreases and the ball opens from its seat so that fluid flows through the gap between chambers 8 and 9 and the gap 14, during retraction of the piston 2 the pressure in chamber 8 increases to dampen the effects of the chain, and the ball of the valve closes the gap between the chambers 8 and 9 allowing fluid to only flow through the gap 14), the control member (7) is movable between first and second stops (unnumbered valve seat

and unnumbered retainer, see Fig 3) and spring-biased (unnumbered valve spring, see Fig 3) to seek a position against a first stop, and the control member (7) moves toward the second stop to at least reduce the fluid flow through the leakage gap, as the pressure in the pressure chamber rises (col. 4 lines 7-10) and Smith shows and renders obvious the first stop having passageways (326) to allow seepage of hydraulic fluid through the leakage gap (see Fig 7.

Re claim 29, Stief et al show the control member is a ball valve (7) disposed between the first and second stops (see Fig 3).

Re claim 30, Smith shows the control member is a plunger (302) disposed between the first and second stops (see Fig 2).

Re claim 32, Stief et al show a tensioner piston (2) bearing upon a chain; a cylinder (3) guiding the piston for movement in a direction of the chain and bounding with the piston a pressure chamber (8) for receiving hydraulic fluid; a first leakage gap (14) formed between adjacent wall surfaces of the cylinder and the piston for migration of hydraulic fluid from the pressure chamber (8); a second leakage gap (unnumbered gap between the chambers 8 and 9) for migration of hydraulic fluid from the pressure chamber; and a control member (7) for regulating a fluid flow through the second leakage gap in dependence on a pressure in the pressure chamber (col. 4 lines 7-10) and the control member reduces a fluid flow through the second leakage gap, as the pressure in the pressure chamber rises (col. 4 lines 7-10).

Re claim 33, Stief et al show the control member closes the second leakage gap, when the pressure in the pressure chamber exceeds an upper limit (col. 4 lines 7-10).

Allowable Subject Matter

5. Claims 5, 16, 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

The Smith reference (US 6,361,458) is used to show that it is known in the art to configure a valve body as a plunger.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5,961,410 Yamamoto (teaches to close the gap as the pressure increases).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vicky A. Johnson whose telephone number is (703) 305-3013. The examiner can normally be reached on Monday-Thursday (7:00a-5:00p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Bucci can be reached on (703) 308-3668. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

vaj *vaj 5/18/03*
May 18, 2003


Thomas R. Hannon
Primary Examiner